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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,164	01/31/2001	Carsten Noeske	Micronas.5873	6108

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EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,164

Applicant(s)

NOESKE, CARSTEN

Examiner

Chat C. Do

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

RS

DETAILED ACTION

1. This communication is responsive to Amendment filed 05/05/2005.
2. Claims 1-11 are pending in this application. Claims 1 and 7 are independent claims. In Amendment, claims 12-18 are cancelled. This Office Action is made final.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Deutsch et al. (U.S. 4,031,377).

Re claim 1, Deutsch et al. disclose in Figure 1 a computing device on a monolithic integrated circuit for multiplying together a digitized multiplier signal value (C or output of 82) and a digitized multiplicand signal value (S or output of 81), computing device comprising: an input interface (81) that receives multiplicand and provides a received multiplicand indicative thereof (80); a first place shifting device (13) that includes a first logical assignment circuit to shift data bits of received multiplicand in response to a first shift command signal (17-21), and provides a first shifted signal indicative thereof (26); a second place shifting device (12) that includes a second logical

assignment circuit to shift data bits of received multiplicand in response to a second shift command signal (16), and provides a second shifted signal indicative thereof (25); means for summing (27) first and second shifted signals (A and B) to provide a summed signal value that is indicative of the product of multiplier and multiplicand (28'); and a control device (14) that receives a signal indicative of multiplier (15), and generates, within at least a clock cycle (e.g. col. 2 lines 5-15, col. 2 lines 25-29, and col. 9 lines 3-9), first (16) and second shift command signals (18-21) indicative of multiplier value.

Re claim 2, Deutsch et al. further disclose in Figure 1 a memory device for storing summed signal, and for providing past values of summed signal value (83).

Re claim 3, Deutsch et al. further disclose in Figure 1 means for summing receives and sums a signal value from memory device indicative of a past value of summed signal value with first and second shifted signals to provide summed signal value (83 acts as an accumulator to sum all the terms).

Re claim 4, Deutsch et al. further disclose in Figure 1 first place shifting device (13) comprises a first sign inverter (table III in col. 6) that receives and selectively inverts the sign of received multiplicand (S) to provide a second sign inverted received multiplicand signal that is input to first logical assignment circuit (13) for bit shifting (col. 5 lines 10-15 and table III in col. 6).

Re claim 6, Deutsch et al. further disclose in Figure 1 control unit (14) generates a first sign inversion command signal (17-19) in response to multiplier value, wherein first sign inversion signal is input to first sign inverter to selectively enable the sign inversion (table III in col. 6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over Deutsch et al. (U.S. 4,031,377), as applied to claim 4 above, in view of Main (U.S. 5,402,369).

Re claim 5, Deutsch et al. do not disclose in Figure 1 a second place shifting device comprises a second sign inverter that receives and inverts the sign of received multiplicand to provide a sign inverted received multiplicand signal that is input to second logical assignment circuit for bit shifting. However, Main discloses in Figure 1 that the multiplier can be factored as multiple plus or minus terms in col. 5 lines 10-15. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add an inverter in the first place shifting device as seen in Main's reference into Deutsch et al.'s reference because it would enable to compute the product faster and more efficient (without the first inverter, the system has to bypass the first place shifting device and subtract in the next clock using the second place shifting device).

Re claim 11, it is a means claim of claim 5. Thus, claim 11 is also rejected under the same rationale in the rejection of rejected claim 5.

7. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being obvious over Deutsch et al. (U.S. 4,031,377).

Re claim 7, Deutsch et al. disclose in Figure 1 a monolithic integrated circuit on a monolithic integrated circuit for multiplying together a digitized multiplier signal value and a digitized multiplicand signal value (e.g. abstract wherein multiplier signal value and multiplicand signal value would be 82 and 81 respectively), computing device comprising: an input interface (e.g. 81 and 82) that receives multiplicand and provides a received multiplicand indicative thereof, first means (e.g. 12) for shifting data bits of received multiplicand in response to a first shift command signal, and for providing a first shifted signal indicative thereof; second means (e.g. 13) for shifting data bits of received multiplicand in response to a second shift command signal, and for providing a second shifted signal indicative thereof, means (e.g. 27) for summing first and second shifted signals to provide a summed signal value that is indicative of the product of multiplier and multiplicand (e.g. output of 28 as $X = SC$); and a control device (e.g. 14) that receives a signal indicative of multiplier that is a binary coded number using canonical form, and generates, within at least a clock cycle (e.g. col. 2 lines 5-15, col. 2 lines 25-29, and col. 9 lines 3-9), first and second shift command signals (e.g. 16 and 17-21) indicative of multiplier value. Deutsch et al. do not disclose in Figure 1 the first and second means are bi-directionally shifter. However, Deutsch et al. discloses another embodiment the shift circuit would be a bi-directional shifter for either shifting left or right depending on the multiplier factor (e.g. col. 4 lines 5-12). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made

to replace the mono-directional shift circuits with the bi-directional shift circuits with functional as cited in Deutsch et al.'s alternative embodiment because it would enable to correctly multiplying with decimal factor.

Re claim 8, it is a means claim of claim 2. Thus, claim 8 is also rejected under the same rationale in the rejection of rejected claim 2.

Re claim 9, it is a means claim of claim 3. Thus, claim 9 is also rejected under the same rationale in the rejection of rejected claim 3.

Re claim 10, it is a means claim of claim 4. Thus, claim 10 is also rejected under the same rationale in the rejection of rejected claim 4.

Response to Arguments

8. Applicant's arguments filed 05/05/2005 have been fully considered but they are not persuasive.

a. The applicant argues in page 6 for claims 1-11 that the cited reference by Deutsch et al. (U.S. 4,031,377) does not disclose the control device generated the first and second shift command within at least a clock cycle.

The examiner respectfully submits that the shifted-sum multiplication in the cited reference is a sequential logic (e.g. col. 2 lines 5-15, col. 2 lines 25-29, and col. 9 lines 3-9). Thus, the control device must be generated the first and second shift command within at least one clock cycle as seen in column 2 lines 5-15.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2193

July 5, 2005


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